



PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#12/BM
6-24-02
1 of 2

Applicant(s) : Goran Nilsson
Serial No. : 09/663,333
For : **USE OF A TRANSFER BELT FOR A SOFT
TISSUE PAPER MACHINE**
Filed : September 18, 2000
Examiner : C. Lopez
Art Unit : 1731

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APPEAL BRIEF OF APPELLANT

Board of Patent Appeals and Interferences
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is an Appeal from the Final Rejection by the Examiner dated October 18, 2001, which issued in the above-identified application, finally rejecting claims 1-8. A Notice of Appeal was filed on March 18, 2002 (received by the USPTO on March 21, 2002). This Brief is submitted in triplicate as required by 37 C.F.R. §1.192(a) and the Assistant Commissioner is authorized to charge the requisite fee set forth in 37 C.F.R. §1.17(f) or charge any deficiency or credit any overpayment to Deposit Account No. 50-0320.

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RELIEF REQUESTED

It is respectfully requested that the rejection of claims 1-8 be reconsidered and withdrawn, and that a Notice of Allowance promptly issue.

REAL PARTY IN INTEREST

The real party in interest is Albany International Corporation, to which Appellant has assigned all interest in this application.

RELATED APPEALS AND INTERFERENCES

Upon information and belief, the undersigned attorney does not believe that there is any appeal or interference that will directly affect, be directly affected by or have a bearing on the Board's decision in the pending appeal.

REQUEST FOR AN ORAL HEARING

An oral hearing is requested.

STATUS OF THE CLAIMS

The Application was filed with claims 1-8 on September 18, 2000 and assigned Application Serial No. 09/663,333.

In a first Office Action dated March 8, 2001, the Examiner rejected claims 1-8 under 35 U.S.C. § 112, second paragraph as allegedly indefinite. The Examiner additionally rejected claims 1-4, 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.), claim 5 under 35 U.S.C. § 103(a) as unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström), and claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

In response to this first Office Action, Appellant filed an Amendment on August 10, 2001, amending claims 1-8 to overcome the 112, second paragraph and 103(a) rejections.

The Examiner then issued a Final Office Action on October 18, 2001 withdrawing the rejection of claims 1-8 under 35 U.S.C. § 112, second paragraph and maintaining the rejection of claims 1-4, 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.), claim 5 under 35 U.S.C. § 103(a) as unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström), and claim 7 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

In response to the Final Office Action, Appellant filed an Amendment After Final on March 18, 2002 requesting reconsideration.

The Examiner then issued an Advisory Action on April 4, 2002 which indicated that the request for reconsideration did not place the application in condition for allowance for reasons previously set forth in the Final Office Action.

A Notice of Appeal and a request for two month extension of time was filed by Appellant on March 18, 2002, from which this Appeal Brief is being filed.

This Appeal Brief is being filed pursuant to the March 18, 2002 Notice of Appeal. Accordingly, the status of the claims may be summarized as follows:

Claims Allowed: None.

Claims Objected to: None.

Claims Rejected: 1-8.

STATUS OF THE AMENDMENTS

Appellant believes that all the submitted Amendments have been entered.

SUMMARY OF THE INVENTION

The present invention is directed to, *inter alia*, an improvement for a tissue machine in which a transfer belt carries a tissue web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, wherein the transfer belt's web-contacting surface has a pressure-sensitive resettable degree of roughness.

ISSUES PRESENTED

1. Whether, under 35 U.S.C. § 103(a), claims 1-4, 6 and 8 are unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.), claim 5 is unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström), and claim 7 is unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhan et al.).

GROUPING OF CLAIMS

For purposes of this appeal, claims 1-8 are to be considered.

ARGUMENTS

Claims 1-8 Are Improperly Rejected as Unpatentable Under 35 U.S.C. §103(a)

Regarding claims 1 through 4, 6 and 8, these claims were rejected under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 5,393,384 (Steiner et al.) in view of U.S. Patent No. 5,298,124 (Eklund et al.).

The Office Action alleges that it would be obvious to use Steiner's paper machine with Eklund's transfer belt to facilitate transferring a paper web to a Yankee cylinder.

Appellant respectfully traverses this position for the following reasons.

Steiner et al. shows a tissue machine which includes an impermeable carrier belt. The belt is shown to carry a tissue web to a Yankee drying cylinder, where the tissue web is transferred from the belt to the cylinder at a nip formed between a roll and the cylinder. As discussed in the present application, this transfer is not always accomplished reliably because the tissue web tends to remain on the smooth belt following exit from the nip. (Specification; page 1, line 22 to page 2, line 9).

Steiner et al. teaches (column 2, lines 15 through 18) that the smooth belt is impermeable to water, and that the forces of adhesion between it and a paper sheet are greater than those between any press fabric and a paper sheet. This is because the belt is much smoother than a press fabric. Moreover, a thin water film between the belt and the paper sheet keeps the sheet on the belt and is the source of the adhesion between the two.

Figures 6 and 7 of Steiner et al. show the transfer of a paper sheet directly from the belt to the surface of a Yankee cylinder at a nip. However, there is no teaching whatsoever in Steiner et al. on how the forces of adhesion acting between the paper sheet and the belt can be overcome on contact with the Yankee cylinder. Those of ordinary skill in the art would readily appreciate that such a transfer, that is, from a smooth belt to a smooth Yankee cylinder, would not occur reliably, if at all.

Eklund et al. shows a transfer belt whose surface has a pressure-responsive recoverable degree of roughness. That is to say, the transfer belt has a smooth surface when compressed in a press nip, but a relatively rough surface when not in a press nip. This property enables a paper web to be removed from the transfer belt downstream from a press nip by a vacuum transfer roll.

In the present invention, as claimed mostly broadly in claim 1, a belt of the variety shown in Eklund et al. is used to transfer a tissue web to a Yankee drying cylinder at a nip. However, Eklund et al. teaches that the surface of the transfer belt becomes smooth in a nip, and that, as a consequence, a paper or tissue web would not be readily removable at such a point.

More specifically, in Eklund et al., the transfer belt in question is shown to carry a paper web through press nips. It should be noted, however, that without exception, the paper web is carried from the nip on the surface of the belt because the belt is smoother (in the nip) than the press fabric used to dewater it. Transfer from the surface of the transfer belt is always shown to be accomplished using a vacuum-transfer roll, not a nip, such as that formed by two rolls. The Eklund et al. reference does not teach or suggest that a paper web could be transferred from the transfer belt in a press nip.

As noted above, compressing the belt makes its surface smooth and allows a thin water film to form between the belt and the paper sheet. This film provides adhesion between the belt and the sheet so that the sheet follows the belt as it leaves the nip. In this connection, the belt expands in the direction of thickness and approaches its non-compressed state such that the water film breaks up.

Moreover, Eklund et al. clearly teaches that the belt is smoothest under compression, that is, in a press nip. Eklund et al. also teaches that the smoothness under compression is what allows the water film which keeps the sheet firmly in contact with the belt surface to form in the first place. Sheet release occurs outside a press nip because of increasing surface roughness as the belt expands, and because the hydrophilic/hydrophobic areas allow water beads to form from

the water film between the paper web and the surface of the belt. Both of these effects allow the sheet to be released from the surface of the belt outside of a nip.

Accordingly, the present invention, now claimed most broadly in claim 1 as an improvement for a tissue machine in which the belt shown in Eklund et al. carries a tissue web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, is neither shown nor suggested by the combined teachings of Steiner et al. and Eklund et al., because Eklund et al. teaches away from this. Therefore, claim 1 is respectfully submitted to be patentable thereover, as are claims 2, 3, 4, 6 and 8 which depend from and further limit the subject matter claimed in claim 1.

Claim 5 was finally rejected as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 4,529,643 (Lundström). Claim 5 is a dependent claim further limiting the subject matter claimed in claim 1 by requiring that the polymer layer completely enclose the carrier.

The Office Action alleges that it would be obvious to enclose Eklund's carrier with a polymer layer in view of Lundstrom for use in Steiner's machine to extend the life of the belt. Appellant respectfully disagrees and offers the following reasons as support.

Lundström shows a press fabric whose structure is filled with a rubber or resin emulsion to reduce its overall permeability. The object is to reduce blowing, rewetting and adhesion problems. While the press fabric is used to convey a paper web through a press section, there is neither teaching nor suggestion in Lundström on how a wet paper web is removed from the surface of the press fabric. As such, one of ordinary skill in the art would not be taught, by reading Lundström, that this could be accomplished at a press nip with a Yankee cylinder, in view of the recognition in the paragraph beginning on line 36 of column 1 that a coated belt does not readily release a paper web. Accordingly, claim 5 is respectfully submitted to be patentable over the combined teachings of the cited references, and for further limiting the subject matter claimed in claim 1.

Finally, claim 7 was rejected as being unpatentable for obviousness over Steiner et al. in view of Eklund et al. and further in view of U.S. Patent No. 5,556,509 (Trokhanev et al.). Claim 7 is a dependent claim further limiting the subject matter claimed in claim 1 by requiring that the polymer layer is embossed to produce embossed soft tissue.

The Office Actions alleges that it would be obvious to emboss Eklund's polymer layer in view of Trokhan to use in Steiner's machine to create an embossed paper once it passed through the press nip section. Appellant respectfully traverses this position for the following reasons.

Trokhan et al. shows a press fabric having a permeable web-patterning layer which imprints a tissue web when the press fabric transfers the tissue web to the surface of a Yankee drying cylinder. The web-patterning layer is not embossed into the coating of an essentially impermeable belt. Rather, it is formed by coating the surface of the press fabric with a photosensitive resin which is then selectively cured by directing actinic radiation through a mask to provide the permeable web-patterning layer with the desired pattern. In other words, the press fabric is not completely coated by the web-patterning layer when its manufacture is complete, and it is not an embossed layer. Moreover, while the web-patterning layer imprints the tissue web onto a Yankee cylinder, transfer is effected through the use of a creping adhesive. Trokhan et al. does not show or suggest that the belt shown in Eklund et al. might be used to transfer a tissue web to a Yankee dryer cylinder at a press nip, even if the belt were embossed. Thus, claim 7 is respectfully submitted to be patentable over the combined teachings of the cited references, and for further limiting the subject matter claimed in patentable claim 1.

In further support of the above arguments, it is well established that there must be some prior art teaching which would have provided the necessary incentive or motivation for modifying the teachings of Steiner et al., Eklund et al., Lundström and Trokhan et al. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (B.P.A.I. 1993). Further, "obvious to try" is not the standard under 35 U.S.C. §103. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). Indeed, as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification." For a Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicant's disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988).

In the present situation, Steiner et al., Eklund et al., Lundström and Trokhan et al. fail to provide the necessary incentive or motivation that would lead a skilled artisan to practice the present invention. That is, Steiner et al., Eklund et al., Lundström and Trokhan et al. do not disclose or suggest an improvement for a tissue machine in which a transfer belt carries a tissue

web to a Yankee drying cylinder and transfers the tissue web to the cylinder at a nip, wherein the transfer belt's web-contacting surface has a pressure-sensitive resettable degree of roughness.

Consequently, a reversal of the Section 103(a) rejection is believed to be in order and such action is respectfully requested.

CONCLUSION

For the reasons discussed in this brief and the arguments of record (incorporated herein by reference), claims 1-8 are patentable over Steiner et al., Eklund et al., Lundström and Trokhan et al. It is, therefore, respectfully submitted that the Examiner erred in rejecting claims 1-8 and a reversal of the rejection of claims 1-8 by this Honorable Board, and prompt issuance of a Notice of Allowance, are earnestly solicited.

Respectfully submitted,

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APPENDIX
CLAIMS ON APPEAL

1. (Amended) In a soft tissue paper machine having an essentially impermeable transfer belt (16) for conducting a soft tissue web (1) through a shoe press nip in the press section of the paper machine, and from the shoe press nip to a Yankee cylinder (5) in the dryer section of the paper machine in a closed draw, which Yankee cylinder forms, together with a transfer means (17), a transfer nip transferring the soft tissue web from the transfer belt to the Yankee cylinder, the improvement comprising an essentially impermeable transfer belt having a carrier and an elastically compressible polymer layer on its side facing the paper web, the polymer layer having a hardness between 50 and 97 Shore A and having a web-contacting surface which has a pressure-sensitive resettable degree of roughness, the web-contacting surface having a degree of roughness in a non-compressed state of $R_z = 2-80 \mu\text{m}$, measured according to ISO 4287, Part I, and a lower degree of roughness of $R_z = 0-20 \mu\text{m}$ when the polymer layer is compressed by a linear load of 20-220 kN/m applied to the essentially impermeable transfer belt as measured in a non-extended press nip.

2. (Amended) An improvement as claimed in claim 1, characterised in that the essentially impermeable transfer belt (16) has an air permeability of less than $6 \text{ m}^3/\text{m}^2/\text{min}$, measured according to the method stated in "Standard Test Method for Air Permeability of Textile Fabrics, ASTM D 737-75, American Society of Testing and Materials".

3. (Twice Amended) An improvement as claimed in claim 1, characterised in that the polymer layer comprises a [particulate filler which has a hardness different from that of the polymer composition, such as kaolin clay, polymer material or metal, preferably stainless steel.]

4. (Twice Amended) An improvement as claimed in claim 1, characterised in that the polymer layer comprises a particulate filler which has a hardness different from that of the polymer composition, [such as kaolin clay, polymer material or metal, preferably stainless steel.]

5. (Twice Amended) An improvement as claimed in claim 1, characterised in that the polymer layer completely encloses the carrier.

6. (Twice Amended) An improvement as claimed in claim 1, characterised in that the carrier is endless.

7. (Twice Amended) An improvement as claimed in claim 1, characterised in that the polymer layer is embossed to produce embossed soft tissue.

8. (Twice Amended) An improvement as claimed in claim 1, together with a transfer means which consists of the transfer belt (16) itself, which runs round a predetermined part of the Yankee cylinder (5) to form an extended transfer nip.